

CLAIMS (as originally filed and published)

1. Method for depositing samples, in which at least one sample (10) is arranged on a substrate (30), said method comprising the steps of:
 - positioning a sample dispenser (20) above the substrate (30), and
 - actuating the sample dispenser (20) so that the sample (10) is moved from the sample dispenser (20) along a trajectory (11) to a predefined deposition position (32) on the substrate (30),

characterized in that

 - at least part of the trajectory (11) is shielded against electrical interference fields.
2. Method according to claim 1, in which the shielding against electrical interference fields is effected by means of a shielding electrode (40), which is arranged along the trajectory (11).
3. Method according to claim 1 or 2, in which at least one electrode sleeve (41), a coating (46) on the substrate (30) and/or a conductive part of the substrate (30) is used as the shielding electrode (40).
4. Method according to at least one of the preceding claims, in which the shielding electrode (40) is at a free potential.
5. Method according to at least one of the preceding claims, in which the shielding electrode (40) is connected to a predefined electric reference potential.
6. Method according to claim 5, in which the shielding electrode (40) is connected to ground potential.
7. Method according to at least one of the preceding claims 2 to 6, in which the steps of positioning and actuating the sample dispenser (20) are carried out a number of times in succession, so that a number of samples are arranged at different deposition positions (32) on different trajectories and form at least one sample array (12) on the substrate (30), wherein the trajectories leading to a respective sample array (12) are jointly shielded against electrical interference fields by the shielding electrode (40).

8. Method according to at least one of the preceding claims, in which it is used as the substrate a reaction plate comprising compartments (34), on the bottoms of which the samples (10) or a number of sample arrays (12) are deposited.
9. Method according to claim 8, in which it is used as the reaction plate a microtitre plate or nanotitre plate comprising an arrangement of wells, on the bottoms of which the sample (10) or the at least one sample array (12) is deposited.
10. Method according to claim 8 or 9, in which the shielding electrode (40) provides electrical shielding against electrical interference fields emanating from side walls (33) of the compartments or wells.
11. Method according to at least one of the preceding claims 8 to 10, in which a shielding electrode (40) comprising a plurality of electrode sleeves (41) is used for electrical shielding purposes, each of said electrode sleeves being provided for one of the wells or one of the compartments.
12. Substrate (30) for receiving samples (10), comprising a substrate body (31), on the surface of which at least one deposition position (32) is provided,
characterized by
a shielding electrode (40), which is designed so as to electrostatically shield the space above the at least one deposition position (32) against electrical interference fields.
13. Substrate according to claim 12, in which the shielding electrode (40) comprises at least one electrode sleeve (41), which has a peripheral support collar (42) at one end.
14. Substrate according to claim 13, in which the shielding electrode (40) comprises a plurality of electrode sleeves (41), the support collars (42) of which are joined to form a base plate (43).
15. Substrate according to claim 14, which is formed by a microtitre plate or nanotitre plate comprising a plurality of wells, wherein the electrode sleeves (41) are positioned on the base plate (43) in the form of a matrix in straight rows and columns in a manner corresponding to the arrangement of the wells of the microtitre plate or nanotitre plate.

16. Substrate according to at least one of claims 13 to 15, in which an adjustment device (50) is provided, by means of which the position of the at least one electrode sleeve (41) relative to the substrate (30) can be adjusted.
17. Substrate according to claim 16, in which the adjustment device (50) comprises a height adjustment and/or a lateral adjustment (51, 52).
18. Substrate according to at least one of claims 13 to 17, in which the support collar (42) or the base plate (43) has an electrode terminal for connection to a reference potential.
19. Substrate according to at least one of claims 13 to 18, in which the shielding electrode (40) is formed of metal or electrically conductive plastic.
20. Substrate according to claim 11, in which the shielding electrode (40) is formed by a coating (46) on the substrate (30).
21. Substrate according to claim 20, in which the substrate (30) is formed by a microtitre plate or nanotitre plate comprising a plurality of wells, and the coating (46) is provided on inner walls of the wells (34) and on an upper side of the microtitre plate or nanotitre plate.
22. Substrate according to claim 20 or 21, in which the coating (46) comprises a metal coating or a coating of conductive plastic.
23. Substrate according to claim 11, in which the shielding electrode (40) is formed at least partially by the substrate (30).
24. Substrate according to claim 23, which consists at least partially of conductive plastic.
25. Substrate according to claim 23 or 24, which is formed by a microtitre plate or nanotitre plate.
26. Shielding electrode (40) for at least one compartment of a reaction plate, comprising at least one electrode sleeve (41), which is arranged on a support collar (42) or a base plate (43), wherein the support collar (42) or the base plate (43) is designed to bear against the upper side of the reaction plate in such a

way that the electrode sleeve (41) in each case protrudes into one of the compartments (34) of the reaction plate.

27. Shielding electrode according to claim 26, in which a plurality of electrode sleeves (41) are provided on the base plate (43) in the form of a matrix in straight rows and columns in a manner corresponding to the arrangement of the compartments of the reaction plate.
28. Shielding electrode according to claim 26 or 27, which comprises an electrode terminal (45) for connection to a reference potential.
29. Shielding electrode according to at least one of claims 26 to 28, which comprises an engagement device (44) for engagement of a tool.
30. Shielding electrode according to at least one of claims 26 to 29, which is equipped with an adjustment device (50) for height adjustment and/or lateral adjustment relative to the reaction plate.
31. Use of a metal sleeve for electrostatic shielding during the deposition of samples (10) or sample arrays (12) onto a reaction plate by means of a contactless dispenser (20).